DOCUMENT RESUME

ED 482 360 CE 085 886

AUTHOR	Cho, DaeYeon; Imel, Susan
TITLE	The Future of Work: Some Prospects and Perspectives. A Compilation.
INSTITUTION	ERIC Clearinghouse on Adult, Career, and Vocational Education, Columbus, OH.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE	2003-00-00
NOTE	29p.
CONTRACT	ED-99-CO-0013
AVAILABLE FROM	Publications, Center on Education and Training for Employment, 1900 Kenny Road, Columbus, OH 43210-1090. Tel: 800-848-4815, ext. 24277 (Toll Free); Fax: 614-292-1260; Web site: http://www.cete.org/products. For full text: http://www.cete.org/acve.
PUB TYPE	Collected Works - General (020) -- ERIC Publications (071) -- Opinion Papers (120)
EDRS PRICE	EDRS Price MF01/PC02 Plus Postage.
DESCRIPTORS	Adult Education; Demand Occupations; *Economic Change; Education Work Relationship; Employment Patterns; *Employment Projections; *Futures (of Society); Globalization; *Job Skills; Labor Force Development; Labor Market; Labor Needs; Labor Supply; *Learning Processes; Postsecondary Education; Role of Education; Technological Advancement; Trend Analysis; Wages; Work Environment
IDENTIFIERS	Electronic Learning; Flexible Staffing; High Performance Work Organizations; *Workplace Learning

ABSTRACT

The question of what the future of work in the United States will be is examined in this publication using current information on trends and issues related to work, the economy, and the labor force. The compilation intended to give an overview of selected aspects of the topic and provide information about other resources. In the first section, four trends--globalization, technology, flexible employment practices, and demographics--that will affect the future of work are examined. The second section reviews current arguments related to the high-skills/low-wage debate and poses some possible scenarios for the future. The third section reviews current trends in workplace learning, including social capital, informal learning, electronic learning, and workplace learning, to make projections about learning in the workplace of the future. The importance of learning as a social process is a common theme in the trends considered. An annotated list provides 13 print resources and 5 websites on the future of work. Contains 105 references. (SK)

Reproductions supplied by EDRS are the best that can be made
from the original document.

The Future of Work

2003

Some Prospects and Perspectives
A Compilation

by DaeYeon Cho & Susan Imel

ED 482 360

Contents

Introduction 2

Current Trends and the Future of Work 3

Globalization 3
Technology 4
Flexible Employment Practices and Future Workers 5
Demographics 6
Conclusion 7

High Skills or Low Wages: Still America's Choice? 8

Employment Projections 8
The Current High-Skills/Low-Wage Debate 9
Possible Scenarios for the Future 11

Learning and the Future of Work 12

Social Capital and Its Role in Learning 12
Informal Learning 13
E-Learning 15
Blending of Learning in and out of the Workplace 16
Summary 17

Conclusion 18

References 19

Resources 24

About the Authors 27

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Center on Education and Training for Employment
College of Education
The Ohio State University
1900 Kenny Road
Columbus OH 43210-1090

Introduction

The future of work could be one where the gap between hi-tech and low skills, between wired and unwired, rich and poor continues to widen into an unpassable chasm. Or it might be a world where we all work less, and find amazing new ways to fill our time.

So what's it gonna be? ("The Future of Work" 2001).

So what's it gonna be?

The question of what the future of work is "gonna be" in the United States is examined in this publication using current information on trends and issues related to work, the economy, and the labor force. Keeping in mind that "pundits who predict the future are [nearly] always wrong" (Peristein 2001), our goal is not to predict the future of work. History is full of inaccurate forecasts because those who make predictions may be overly pessimistic, overly optimistic, or simply assume that "the future will continue on a logical path based on what is happening today" and end up making so called "safe" predictions (Lee 2000, p. 21). Instead, our goal is to present current information that has implications for the future of work and suggest some possibilities for what might occur in future workplaces.

The publication is a compilation that examines various aspects of the future of work. In the first section, four trends—globalization, technology, flexible employment practices, and demographics—that will affect the future of work are examined. The second section reviews current arguments related to the high-skills/ low-wage debate and poses some possible scenarios for the future. A third section reviews current trends in workplace learning to make projections about learning in the workplace of the future. The importance of learning as a social process is a common theme in the trends considered. An annotated list of resources on the future of work concludes the publication.

The compilation is by no means an exhaustive treatment of the topic of the future of work. Rather, it is designed to give an overview of selected aspects of the topic and provide information about other resources. Many sources on the future of work are international and available through the Web; several of these are listed in the final section of the paper. International material has relevance for the United States, but, because the focus of this paper is on the United States, most of the sources cited are concerned with work in this country.

Current Trends and the Future of Work

A number of trends associated with the current social, political, and economic climate have been identified by scholars and futurists. Four that are important in understanding the future of work are globalization, technology, flexible employment practices, and demographics. Although the trends are closely related and mutually interactive, they are described separately here.

Globalization

Globalization is an essential trend to include in any discussion of the future of work. Although it is a widely used term, globalization still lacks a clear definition (Ghose 2003). According to Ghose (ibid.), "Globalization is a process of integration of national markets into a global market" in terms of both products and factors of production (p. 5). Bierema et al. (2002) define globalization as "the crossing of financial, technical, and cultural boundaries to facilitate a global flow of goods, information, and services" (p. 72). Globalization is controversial as "some view it as a process that is beneficial, inevitable, and irreversible. Others regard it with hostility, even fear, believing that it increases inequality within and between nations, threatens employment and living standards and thwarts social progress" [International Monetary Fund (IMF) 2000, p. 1]. Since many trends that influence the workplace are frequently associated with the economy, this section primarily focuses on economic globalization. Economic globalization refers to "the increasing integration of economies around the world, particularly through trade and financial flows" (IMF 2000, p. 2), and "the process by which the whole world becomes a single market" (Black 2002, p. 1). As such, labor, goods and services, capital, and knowledge tend to move freely across international borders and create a single global market.

For the last 2 decades, a global movement of goods and services has been facilitated across nations due to the opening of free trade among nations and greater worldwide free-market economies (Larson 2002). Such a flow has contributed to the growth of employment in some industries—such as industrial machinery, electronics products, and transportation equipment—in which the U.S. exports heavily ("Futurework" 2000).

In responding to competitive pressure to balance wages and prices in the industrialized lands, companies searched overseas for cheap labor and a more favorable investment climate (Cetron and Davies 2003a). Domestic companies rapidly moved their production abroad, where low-skill and low-wage labor was located (Ellwood 2002). Moreover, many developing countries in Asia and Latin America reduced their trade barriers to offer greater incentives to many international companies to relocate to their countries. As a result, " [globalization] has led to increased unemployment and underemployment among a growing segment of the U.S. working class" (Katz-Fishman et al. 2002, p. 191). Additionally, imports of goods from low-wage factories abroad are a major cause of the recent loss of U.S. manufacturing jobs. Therefore, "America's challenge is rapidly to move as many displaced workers as possible into producing goods and services where both productivity and pay are higher" (Judy and D'Amico 1997, p. 28). To do this, the U.S. labor market needs to become more flexible.

Pervasive technological change is becoming one of the symbols of a new globalization (Cetron and Davies 2003a; IMF 2000). The technologies underlying the Internet and telecommunications have increased a global flow of information beyond international trade and movement of capital—such as goods, services, production lines, and labor—between countries, speeding globalization ("Futurework" 2000). People in the world can exchange almost unlimited quantities of information easily and inexpensively.

Although globalization is hardly new, this trend is expected to continue to influence tomorrow's workplace. Globalization is likely to provide a greater worldwide market with more participants. Many countries have eliminated their barriers to trade and regulations limiting access to world markets (Council of Churches for Britain and Ireland 1999). Regardless of scale, entrepreneurs gain access to new markets for their goods and services. For example, the growth of commerce

on the Internet allows small companies to shop globally for raw materials and supplies while reducing the cost. In turn, they can compete with large companies worldwide with relatively little investment (Cetron and Davies 2003b).

In the era of a knowledge-based economy, globalization calls for a new type of global worker, who is independent and seeking flexible employment (Thornburg 2002). Both skilled and unskilled workers may need to continue to seek work on their own, but globalization enables work to come to the new global worker. Corporations, for example, will find highly skilled knowledge workers wherever they may be in the world (Cetron and Davies 2003b). In addition, the knowledge worker creates many opportunities for new business (Thornburg 2002). Thus, new jobs will likely be created as markets globalize.

Technology

Access to information and knowledge will be critical for individuals to take part in work and social life in the future. In the workplace of the future, the predominance of information technology (IT) will continue through the ongoing convergence of computer science and telecommunications (Judy and D'Amico 1997). Two main questions regarding technological advance are as follows: "How does technological change affect tomorrow's workplace?" and "Will technology create or destroy jobs?"

Technological advances may create new high-skilled jobs or destroy current jobs.

The use of computers is increasing significantly in and out of the workplace and computers have become a part of life (Judy and D'Amico 1997). In today's workplace, for example, it is common for employees to have their own computer at their desks and many also have computers in their homes. The majority of U.S. workers spend an average of 3 hours per day using a computer both at work and at home and "for multiple applications ranging from work tasks to shopping on the Internet" (***Nothing But Net*** 2000, p. 21). Cetron and Davies (2003a) foresee that "computer competence will approach 100 percent in the United States' urban areas by 2005" (p. 31). By 2020, nearly 90 percent of American households will have computers regardless of income level (Potter 2003).

Telecommuting, which allows workers to work outside a traditional office setting, is one of the most attractive computer applications (Heidemann 2001; ***Nothing But Net*** 2000; Potter 2003). As the use and applications of computers increase, jobs in computer software and hardware sales and service will expand (Judy and D'Amico 1997).

With the development of semiconductor production and wireless technology, portable computers provide unlimited access to the world of information and knowledge (Cetron and Davies 2003b). Many workers, for example, have access to a fast connection to the Internet for internal and external communication whenever they want it (Berg 1999). A great deal of information in and out of the workplace can be turned into an increasingly valuable asset (Ellwood 2002). Because the number of mobile telephone users is rapidly increasing, the future will be an era of mobile revolution (Keegan 2002). IT innovations such as the mobile telephone will lead to new levels of worker involvement and worker interaction in the workplace (Jenson 2001; Smith 2003). As a result, cultural, political, and social isolation will rarely take place in future work and social life (Cetron and Davies 2003b).

Technological change has great power to affect labor markets either positively or negatively (e.g., Council of Churches for Britain and Ireland 1999; Kerka 2000; Munro and Rainbird 2002). Technological advances may create new high-skilled jobs or destroy current jobs. On the one hand, technological changes transform the traditional type of manual work into more highly skilled work (Heidemann 2001; Munro and Rainbird 2002). Cetron and Davies (2003b) foresee that in the next 10 years, "close to 10 million jobs will open up for professionals, executives, and technicians in the highly skilled service occupations" (p. 35). On the other hand, technology may have a negative impact on the workplace. Total employment in the computer industry fell by 26 percent between 1983 and 1994, for example, and it is projected to fall by another 25 percent by

2005 (Judy and D'Amico 1997). Due to increased automation, Coates (2002) estimates that only 70 percent of today's work force will be on the job within about 10 years.

Although the literature contains different viewpoints as described, many writers believe that recent technological changes will continue to create jobs that require higher-order skills than the current production jobs. Concurrently, such technological changes (e.g., automation) remove opportunities for worker self-development, and, in a process commonly known as deskilling, work that was formerly done by humans is being done by machines. The advent of highly skilled jobs emerging from technological changes is resulting in inequality between highly skilled workers and those who are low skilled or in low-wage jobs.

Flexible Employment Practices and Future Workers

In discussions of the workplace of the future, flexible employment practices are a major issue (Cetron and Davies 2001; Ellwood 2002; Grantham 2002; Jenson 2001; Keep and Mayhew 1999; Tremblay 2001). The move toward nonstandard work—not full time, year round, or under a long-term employment contract—is increasingly common. When nonstandard work results from the alteration of work practices so that regular workers are reemployed on a temporary or short-term basis, it is known as casualization (***Collins English Dictionary*** 2000). Temporary or casual work usually pays lower wages, does not provide benefits, and is associated with economic insecurity (Jorgensen 1999). Whether by personal choice or because it is the only type of work available, flexible, nonstandard work arrangements are becoming the norm in North American workplaces (Jenson 2001).

Flexibility in work arrangements allows work tasks to be conducted in a variety of locations remote from the central workplace, depending on the task at hand, the tools available, and the requirements of the customer. In the global economy, the service sector is the fastest growing sector and many of the jobs in this sector may be for part-time workers (Cetron and Davies 2001). Because workers may be engaged in teams for only a brief time and in multiple projects in more than one firm at once, affective attachments between worker and firm will be weak (Grantham 2002; Taylor 2002). Tremblay (2001) points out that flexible work arrangements can contribute to "balancing family needs and participating in nonworking activities, such as sports, training, social and political activities" (p. 16).

The rise of self-employed workers is a part of the issue of flexible employment that has been well documented in terms of the future of work (Falk 2001). Many industrialized nations reported continually increasing self-employment rates at the end of 20th century (Organisation for Economic Cooperation and Development 2000). By 2006, the number of workers who are self-employed in the United States is projected to rise to 10.2 million (Cetron and Davies 2003b) because of the restructuring and redistribution of work due to technological change and globalization (Kerka 2000). Many people will not choose to become self-employed but "many... are effectively pushed into it because there are few regular jobs available or because of the recent tendency of firms to 'outsource' certain tasks" (Tremblay 2001, p. 10). Additionally, since self-employment is an attractive option to some young workers, it may be increasingly common in the future (Cetron and Davies 2003b).

Flexible employment practices may help workers create more balanced work lives.

In the future, flexible employment practices may help workers create more balanced work lives. Those workers who will have choices about establishing where and when they work, flexible work arrangements will permit them the freedom to attend to family needs and other personal responsibilities. For many, however, the growing trend toward casualization of work will mean fewer opportunities to establish careers and the likelihood of a future in low-wage work.

Demographics

The size of the total work force is likely to increase only slightly in the United States because growth in the total population is leveling off (American Youth Policy Forum 2001; Domestic Strategic Group 2002). The composition of the work force will be influenced by demographic changes. Three areas in which the work force of the future is projected to change include a changing gender balance, an increase of older workers and a projected shortage of workers, and the balance between native-born and immigrant workers.

Gender Balance in the Workplace

In the United States, the percentage of women in the workplace has increased significantly since the 1970s. Whereas only 57 percent of women of working age participated in the labor force in 1971, by 1991 the proportion had risen to 71 percent (Smith 1999). The increase in the number of women in the work force will continue in the future, and "by 2020, men and women will each comprise about half the total workforce" (Judy and D'Amico 1997, p. 88). As mentioned previously, the service sector is the fastest-growing area in global economy. In Canada, industries in the service sector have a great demand for women workers (Jenson 2001), and it is likely to be the same in the United States. In addition, women are likely to achieve salary parity with men (Cetron and Davies 2001). The increase in the number of women participating in the labor force may accelerate some of the social changes experienced in the past 2 decades. Although families will continue to make adjustments to the demands of work, adjustments will be made by employers to accommodate the needs of families by providing such benefits as flexible work schedules and more telecommuting opportunities.

Older Workers and a Projected Shortage of Workers

By 2020, 76 million baby boomers will be in their 70s (Judy and D'Amico 1997). A shortage of future workers is a critical concern since many of the current work force will retire in the next 10 years at the same time that the United States is experiencing zero population growth (Carnevale 2002; Eisen 2003; Raphael 2002). Retiring baby boomers, therefore, may not be replaced in the work force by the smaller number of "baby busters"—those born from 1965-1985 (Judy and D'Amico 1997). Furthermore, the transition from school to work is more likely to take longer for young people (Jenson 2001). Carnevale (2002) pointed out the shortage of well- educated professional workers: although 46 million college-educated workers will leave the work force and 49 million workers with college degrees will enter it over the 2 decades, there will be 12 million new skilled positions opening over that same period. A skill shortage of 9 million college educated workers is projected by 2020 (American Youth Policy Forum 2001).

Aging workers may not leave the work force due to projected reductions in Social Security and Medicare benefits (Cetron and Davies 2003a). Many well-educated workers may decide to remain in their professional jobs (Judy and D'Amico 1997). Employers may not want aging workers to retire because of the need to increase productivity (ibid.) or because productivity cannot be increased through technological change alone.

Native-born and Immigrant Workers

A growing percentage of immigrants from developing countries has entered the U.S. labor force (Cetron and Davies 2003a). Since 1992, for example, 80 percent of all new workers in manufacturing have been immigrants (Eisen 2003). Because this trend is expected to continue, the impact of immigration on the labor force of the future will be greater than in the recent past (Cetron and Davies 2003a; Judy and D'Amico 1997). Currently, the contribution of many highly educated immigrants plays a vital role in advanced-technology industries. Furthermore, because the number of native-born workers aged 25-54 is not sufficient to replace retiring workers, companies will not be able to count on a steady stream of native-born workers (Ellwood 2002). Conse-

quently, companies are likely to hire more foreign-born, immigrant workers. The increase in the number of immigrant workers is accompanied by social concerns. Some are poorly educated and some have entered the United States illegally. Clashes between natives and immigrants are becoming a workplace issue because of how they are adjusting to the United States and the culture of its workplaces (Cetron and Davies 2003a).

The future of immigration is uncertain. The number of immigrants in the next few years can be calculated based on the annual average of the last decade but actual numbers will depend entirely on whether immigration policy is liberalized or restrictive (Judy and D'Amico 1997). For instance, since the September 11 terrorist attacks, the immigration policies of the United States have become more restrictive (Ellwood 2002). Consequently, labor force growth due to immigration may decrease in the future.

Conclusion

The four trends discussed here are well established and will continue to influence work, workplaces, and workers in the future. Other trends such as the decline of unions and the crisis of ethical work practices that were not discussed will also continue to have an effect on work in the future (Cetron and Davis 2001). Finally, new, unforeseen trends will undoubtedly emerge in the next 10 years that will have an impact on the future of work.

High Skills or Low Wages: Still America's Choice?

In 1990, the report of the Commission on the Skills of the American Workforce, ***America's Choice: High Skills or Low Wages?***, touched off a debate about the choices available to the United States to ensure a more prosperous future, a debate that continues today and has implications for the future of work. This section considers the question, "Will work of the future be dominated by jobs that require high skills with concomitant good wages or will low-wage work predominate?" The trends described earlier—globalization, technology, flexible employment practices, and demographics—are factors in the current discussions about high skills or low wages and are referred to in some of the arguments and projections reviewed here. Three possible future scenarios are posed at the conclusion of the section.

Employment Projections

The well-established trend of growing employment in the service sector and waning employment in the manufacturing sectors will continue.

Although "changes in the economy and technology, social trends and other factors can and will affect jobs in unexpected ways" (Indiana Career and Postsecondary Advancement Center 2001, p. 1), employment projections from the U.S. Department of Labor's Bureau of Labor Statistics (BLS) give some indication about the type of jobs that will be in demand in the future. The latest projections from BLS covering 2000-2010 indicate the following:

- Nearly one-half of all job openings are projected to be in service and professional and related occupations. Professional occupations are projected to grow because some are concentrated in the fast-growing service industries ("Charting the Projections: 2000-10" 2001-02; Hecker 2001).

- Very slow growth is projected for the production occupations, despite the fact that in 2000, three of four workers were employed in manufacturing. More than one-half of the projected new jobs in production occupations are slated for the business services industry (Hecker 2001). The continuing decrease in jobs projected for traditional manufacturing industries reflects how service industries will continue to dominate occupational growth (Bernhardt et al. 2001).

- Employment growth will be concentrated in the service-producing sector, with services and retail trade industry divisions accounting for nearly 76 percent of all job growth in that sector. Four service industries are projected to account for one-half of all wage- and salary-growth in the economy: health services, business services, education services, and engineering and management services ("Charting the Projections: 2000-10" 2001-02).

- Nine of the 20 occupations projected to grow the fastest are computer related, including the seven with the fastest projected growth. Six of the top 10 occupations projected to grow the most rapidly will pay in the top earnings quartile, including computer software engineers, applications (number 1); computer software engineers, systems software (number 3); network and computer systems administrators (number 4); network systems and data communications analysts (number 5); database administrators (number 7); and computer systems analysts (number 9). Only 1 job in the top 10—personal and home care aides—pays in the bottom earnings quartile (ibid.).

- Five of the top 10 occupations projected to have the most growth will pay in the bottom earnings quartile, including food service workers (number 1), retail salespersons (number 4), cashiers (number 6), security guards (number 8), and waiters/waitresses (number 10). Other low-wage jobs in the list of the top 20 occupations projected to gain the most jobs include janitors (number 14); teachers' assistants (number 16); home health aides (number 17); and laborers and freight stock and materials movers (number 18) (ibid.).

- Most new jobs will be in occupations that require only work-related training such as on-the-job training or work experience in a related occupation, even though these occupations are projected to grow more slowly than those requiring more education (Redovich 2003).

BLS employment projections indicate that the well-established trend of growing employment in the service sector and waning employment in the manufacturing sectors will continue (Bernhardt et al. 2001). A number of jobs that are considered to require high skill will experience the most rapid growth. Because the greatest increase in actual numbers of available jobs will occur in the service-related industries, however, most of the projected available jobs will be low wage with little opportunity for advancement.

The Current High-Skills/Low-Wage Debate

BLS job projections' information for 2000-2010 are a conundrum. Certainly, the type of jobs needed to achieve a high-skills work force will be available, but will enough of these jobs be available to meet demand, will growth in the high-skills job areas continue, and what about the large number of projected jobs that are low wage?

Highly developed countries like the United States have created employment scenarios that reconfigure job supply and employment relations to suggest a large growth in the need for highly educated workers and little need for the kinds of jobs that low-wage workers are likely to have. Empirical studies, however, do not support these scenarios as they show continued high demand for low-wage workers and a substantial number of both old and new jobs that require little education and pay low wages, often below subsistence levels (Sassen 2002a,b).

Three factors are helping to account for the continuing demand for low-wage workers. The first is the consolidation of advanced services and corporate headquarters, especially in the economic core of large cities, that leads to new kinds of economic activity (ibid.). Consolidation has resulted in growth of low-wage careers in the service industries and in nonmanagerial occupations and in relocation of firms to low-wage areas (Bernhardt et al. 2001; Carnoy 1999). The second factor is the reduction of the manufacturing sector, with some manufacturing industries—such as those in the high-tech sector—becoming incorporated into the postindustrial economy. The downgrading of manufacturing is in response to competition from less-expensive imports and to the higher profit potential—when compared to manufacturing—of telecommunications, finance, and other types of corporate services. (Sassen 2002a,b). Finally, when firms are unable compete with less-expensive imports, many economic activities are becoming "informalized," especially those for which there is a growing local demand, including child care, household help, and so forth (ibid.). "As with deregulation (for example, financial deregulation), informalization introduces flexibility, reduces the 'burdens' of regulation, and lowers costs, in this case of labor" (Sassen 2002b, p. 258). The growth in temporary and contract workers can be attributed to the shift in the labor market toward flexibility (Jorgensen 1999).

According to Sassen (2002b), two assumptions about work in the current economy need to be reconsidered. The first has to do with the type of workers primarily required by the postindustrial economy. The assumption that highly educated workers will be in demand is borne out neither by Sassen's analysis (2002a,b) nor by information on job projections from BLS ("Charting the Projections 2000-10" 2001-02; Hecker 2001). The second assumption has to do with the informalization and downgrading of jobs. These are not phenomena associated only with developing countries or anachronistic holdovers from the industrial economy but are realities in the current postindustrial economy (Sassen 2002b).

The types of changes described by Sassen (2002a,b) are present in the current economy. Analysts predict, for example, that most of the 2.7 million jobs lost since 2001 will not be coming back due to structural changes in businesses and the broader economy and that many of the jobs that will be created will be very different from those that were lost (Geller 2003). Training and education can equip individuals with new skills, but better-paying jobs may not be available to

move into because job growth is in the low-wage sector (Shulman 2003). In addition, although young people with a college degree continue to earn more than high school graduates, they earn less compared to 25 years ago (Jorgensen 1999).

The case for low-wage jobs continuing to dominate seems compelling. Some predict, however, that jobs requiring high skills will prevail and that there will be a shortage of skilled workers to fill these jobs [Hall 2003; National Association of Manufacturers (NAM) 2001; Thornburg 2002]. According to BLS projections ("Charting the Projections: 2000-10" 2001-2002; Hecker 2001), the majority of the jobs that will experience the most rapid growth are high skill. The challenge will be for the economy to continue creating more of these jobs. Also, will enough workers with the right skills be available to fill these jobs? The major finding of the report, ***The Skills Gap 2001*** (NAM 2001), was that manufacturers in the United States—

> face a persistent skills gap in the work force, despite an economic downturn and despite billions of dollars spent on education and training initiatives in the past decade. This gap derives from long-term forces—demographics, technology, and globalization—whose impact will be felt for years to come. In dealing with short-term cyclical impacts on the work force, the nation must not lose sight of these long-term forces, whose challenges to the economy are severe and require a concerted response. (p. 1)

The case for low-wage jobs continuing to dominate seems compelling. Some predict, however, that jobs requiring high skills will prevail and that there will be a shortage of skilled workers to fill these jobs.

Consistent with the NAM report are predictions by Roger Herman, a workplace futurist, who suggests that "the U.S. skilled-worker crisis has begun [and] by the end of next year [2004]....employers will be scrambling for talent" (Hall 2003, p. B2).

According to the NAM report, the trends of technology, demographics, and globalization are influencing the shortage of skilled workers in manufacturing as follows (Eisen 2003):

- Technology has infused manufacturing processes and increased both productivity and product quality so that most manufacturing jobs have become technology jobs. This means that all workers employed in manufacturing must be technically competent. Although manufacturers have invested large amounts in training to ensure that current workers acquire new technology skills, the pool of potential entry-level workers lacks the background in math and science that is required for the high-tech workplace that manufacturing has become.

- Demographics are also influencing the shortage of skilled workers: the average age of the current skilled manufacturing worker is the late 50s. The population growth within the United States has been near zero; as a result, since 1992, nearly 80 percent of new entrants into manufacturing have been immigrants. Despite the fact that the number of 18-24 year-olds will peak in 2015, some demographers predict that an additional 12 million skilled workers will be needed by 2020.

- Globalization is also affecting manufacturing as companies in the United States are involved with manufacturers throughout the world as competitors, suppliers, and/or customers. To be competitive, manufacturers in the United States must cut costs and be responsive to customer needs. "These competitive mandates put a high premium on the skills, morale and commitment of workers" (Eisen 2003, online).

The potential shortage of high-skilled workers gives rise to debates around education and training. According to the NAM survey (2001), although many jobs in manufacturing require a four-year degree, many others demand only a training certificate or a two-year degree. Future projections, however, indicate a sharp decline in the number of workers who will acquire some education and training beyond high school (Aring 2002). This decline is happening at the same time that technology has increased the level of skills required in today's manufacturing industries (Aring 2002; NAM 2001). The depiction of a shortage of adequately prepared workers that can be remedied with education and training contrasts sharply with the BLS projection that by 2010, nearly one-half of all new jobs will require only relatively brief on-the-job training and that

currently only 3 of 10 positions require more than a high school diploma. Furthermore, many low-wage jobs are not low skill. Nursing home workers, for example, must be compassionate, pay attention to detail, and have emotional and psychological strength. More education and training or retraining for everyone will not solve the dilemmas posed by low-wage work (Shulman 2003)

Possible Scenarios for the Future

What do the current trends and predictions about low wage work and a shortage of high- skill workers tell us about the future? Is the glass half empty or half full? And does the United States still have a choice in determining what will happen? More than a decade later, many of the conditions that stimulated the report, ***America's Choice: High Skills or Low Wages*** (Commission on the Skills of the American Workforce 1990), remain the same. The nation is still faced with changing demographics that forecast a shortage of future workers, the quality of education—especially at the high school level—is being questioned, the need for two-year postsecondary degrees and training certificates is being emphasized, and the federal and state governments are still struggling to put into place a system of education and training under the Workforce Investment Act. A number of scenarios for the future of high skills and low wages can be envisioned. Three that seem possible are as follows:

- **Maintaining the Status Quo**. In the first possible scenario for the future of high skills and low wages, the situation remains virtually the same as it is at the end of 2003. The number of jobs requiring high skills has not increased substantially nor has the number of low-wage jobs declined because they are still essential in supporting other parts of the economy (Sassen 2002a,b). Educators and policymakers are continuing to work to reform schools and discussions about the need for a more highly skilled work force are ongoing. No significant inroads have been made in either category, however.

- **Approaching a Two-Tiered Work Force**. A second, more pessimistic scenario finds jobs clustered at either end of the high-skills/low-wage continuum, with few jobs in the middle. Jobs that formerly provided a living for the middle class have virtually disappeared because they have become low-wage jobs (Shulman 2003). In terms of the manufacturing industries, the "hollowing out of the core of what has been the mainstay of U. S. economic growth"(Eisen 2003, online) has continued. The economic, political, and technical forces that existed in 2003 and that were resulting in growing earnings disparity, informalization of the labor market, and a shift toward temporary and contract work were not reversed. As a result the "tendency toward sharper economic polarization" was realized (Sassen 2002a, p. 90). The United States will have lost its dominant position in the global economy (Eisen 2002).

- **Achieving Balance**. A third scenario finds that a balance has been restored in the number and kinds of available jobs. Policies are in place to reverse many of the political, economic, and corporate decisions made during the past 25 years that led to the polarization of the job market. Efforts to reform K-12 education have been largely successful and graduates are prepared to enter either the job market or postsecondary education and training. Upgrading of the current work force is continuing at a rapid pace and workers are able to move from job to job on an upward career ladder.

Does the United States still have a choice in terms of high skills or low wages? Will the nation continue to see an erosion in jobs in the middle, with continuing growth in low-wage jobs? Or will policies be put in place to reverse this trend? Although none of the three scenarios posed here is likely to be realized as portrayed, it is clear that, unless action is taken, the future of work for many will be bleak.

Learning and the Future of Work

Work-related learning is big business. In 2003, companies plan to spend over $51 billion for education and training of the work force ("Industry Report 2003"). The majority of the activities in workplace education and training are designed to help workers acquire specific skills that will enable them to do their jobs more efficiently and effectively. Increasingly, the current literature on workplace learning reflects a growing interest in a type of learning that can be characterized as focusing on participation. This perspective views learning as a social process of participation rather than as skill or knowledge acquisition. When learning is viewed as participation, no observable teaching process is occurring and learning is integrated with work (Elkjaer 2003). Obviously, both perspectives of learning are important in the workplace. Learning as skill and knowledge acquisition has dominated workplace learning, but trends in workplace learning indicate that the participation perspective will gain more currency in the future.

At the organizational level, the integration of work and learning is represented by terms such as organizational learning, the learning organization, and community of practice. All of these concepts draw on learning theory that views learning as a social process in which individuals interact with each other and with social texts to lead to change (e.g., situated cognition as described by Lave and Wenger 1991). This learning is also constructivist in nature and helps individuals make sense of their experience (Merriam and Caffarella 1999). A growing body of literature addresses these concepts, a trend that will likely continue in the future. Perspectives on organizational change have shifted to the promotion of learning organizations designed to enable workers to share their knowledge and experience on the job (Jenson 2001; Livingstone 2001). The community of practice concept also fosters collective intelligence through collective organizational learning (Jenson 2001; Smith 2003). As learning adjusts to accommodate trends such as global capitalism and the knowledge-based economy in contemporary workplaces, integration of learning with work is becoming a predominant discourse among scholars and practitioners concerned with workplace learning. In the future, more learning will occur in the actual work context, because "workers will be less patient to wait for planned learning events... learning will increasingly be recognized as an integral part of doing, and doing will be recognized as an integral part of learning" (Rothwell 2002, p. 29). Four trends related to learning as participation are described here. Each of these trends is expected to influence the future of learning in the workplace.

Social Capital and Its Role in Workplace Learning

The development of social capital is often unrecognized as an important aspect of informal learning.

Because social capital can be recognized as a central feature of social learning, its role in workplace learning has become a topic of increasing interest (Dovey and Onyx 2001; Kilpatrick et al. 1999). What is social capital? "Social capital relates to features of social organization such as networks, norms, and trust that facilitate coordination and cooperation for mutual benefit" (Falk and Harrison 1998, p. 613). In general, social capital includes the networks, shared values, and trust among members and is accomplished through interaction of members of the network (Falk 2001; Putnam 1995). Kilpatrick et al. (1999) identified networks, commitments, and shared values as the components of social capital. Imel and Stein (2003) pointed out that "social capital includes the knowledge and networking resources that reside in and are available for a community to use toward the common good" (p. 117). Niemela (2003) contended that a core element of the concept is the "capacity to work together for common goals" (p. 38). Social capital requires common interests to be shared among members and then it enables them to work together toward mutual goals. In turn, acknowledging mutual benefits facilitates members' collaboration and cooperation. These elements of social capital contribute to "the quality of learning interactions" (Kilpatrick et al. 1999).

Through the process of building networks between individuals, between individuals and groups, and between groups of groups, social capital is created and disseminated. Learning can (and frequently does) take place when individuals and groups interact toward shared goals (Falk 2001;

Kilpatrick et al. 1999; Niemela 2003; Stein 2001). Learning through interactions in the workplace can facilitate the development of social capital. Collective forms of learning such as team or group learning may also be facilitated by the preexistence of high levels of social capital (Dovey and Onyx 2001).

The various roles of social capital associated with learning can be summarized as follows:

- Social capital as a product of learning in community and/or organization (Balatti and Falk 2002; Dovey and Onyx 2001; Imel and Stein 2003)
- Social capital as a means of learning (Dovey and Onyx 2001; Falk 2001)
- Social capital as a resource to enhance learning in community (Balatti and Falk 2002; Imel and Stein 2003)
- Social capital as a tool to achieve organizational goals and change (Dovey and Onyx 2001; Falk 2001; Kilpatrick et al. 1999)

The role of social capital associated with learning in the workplace has three general aspects. It can serve as a resource or a process for learning or it might be the product of learning. All levels of learning—individual, group, and organizational—occur in the context of social capital (Falk et al. 2000). The product of this learning also enables change to occur in organizations. Social capital is particularly influential on the outcomes of informal learning (Kilpatrick et al. 1999).

Social capital can be increased by calling on existing networks and generating new networks (Falk et al. 2000). The quality of networks depends on the degree of members' engagement with shared issues through interactions (Imel and Stein 2003). Such a characteristic is a predominant aspect of informal learning. In terms of creating social capital, Niemela (2003) addressed the importance of learning situations that consist of free dialogue, mutual interaction, exchanges of experiences, and sharing of understanding. These elements of learning environments are also core components of informal learning. Nevertheless, "the development of social capital is often unrecognized as an important aspect of informal learning" (Imel and Stein 2003, p. 117).

The most significant learning over the lifetime is informal and occurs outside the education system.

Informal Learning

Growing recognition of the role and importance of informal learning is another trend in workplace learning that will influence work in the future. Closely related to social capital, informal learning is also a social learning process. Workplace learning takes a variety of forms including formal, informal, and incidental. Traditionally, individuals acquired the skills and knowledge required to perform tasks successfully through formal learning in the workplace. Participation in formal learning programs has been regarded as the predominant way of learning in the workplace (Cairns 2001; Overwien 2000). Although informal learning has always had a large role in the learning that takes place in the workplace, this learning approach has been ignored and undervalued (Boud and Middleton 2003; Overwien 2000; Unwin and Fuller 2003; ***What Makes for Good Workplace Learning?*** 2003).

Increasingly, the belief exists that the most significant learning over the lifetime is informal and occurs outside the education system (Cairns 2001). People at work also continually engage in informal learning activities to acquire knowledge and skill beyond the narrow boundaries of formal learning programs (Livingstone 2001). Informal learning is closely embedded in work activities (Berg 1999). Consequently, informal learning needs to be revisited as a valid form of workplace learning (Hager 1998).

Definition of Informal Learning and Some Examples

According to Marsick and Watkins (2001), "informal learning is usually intentional but not highly structured" (p. 25). In contrast, Lohman (2000) used a broader perspective to conceptualize informal learning: "Unlike formal learning, informal learning can be either planned or unplanned

and structured or unstructured" (p. 84). Informal learning refers to activities initiated by the learner for the learner's own purpose, such as the development of individual knowledge and skills (Cairns 2001; Lohman and Woolf 1998); it is "learning in which the learning process is not determined by the organization" (Center for Workforce Development 1998, p. 35).

There is no doubt that informal learning takes place across a variety of contexts and places, even in formal learning situations. Examples of informal learning are "self-directed learning, networking, coaching, mentoring, and performance planning that includes opportunities to review learning needs" (Marsick and Watkins 2001, p. 25). By conducting some case studies in worksites, Livingstone (2001) found that many assembly-line workers have developed informal networks to teach and learn from each other, including mentoring as a form of creating informal learning in the workplace. The primary setting for informal learning is in the course of work activities and it occurs during "teaming, meetings, customers interactions, supervision, mentoring, shift change, peer-to-peer communication, cross-training, exploration, on-the-job training, documentation, execution of one's job and site visits" (Center for Workforce Development 1998, p. 11). Boud and Middleton (2003) discovered that "learning from peers is a predominant mode in the workplace" (p. 201).

The Role of Informal Learning in the Workplace

Employers and workers each view informal learning as a means of increasing their effectiveness. The role of informal learning can be divided into three broad categories:

1. **Informal learning as a complement to formal learning**. According to Unwin and Fuller (2003), workplace learning represents "the opportunity to reach adults who do not participate in or have little access to formal learning opportunities" (p. 1). Both formal and informal learning approaches have strengths and weaknesses. Informal learning does not replace formal learning but complements it (Cofer 2000). Both formal and informal learning are beneficial for workers to have richer opportunities for development and it is important to find the right balance between them (Center for Workforce Development 1998; ***What Makes for Good Workplace Learning?*** 2003).

2. **Informal learning as a tool for increasing social capital.** Networking is a primary tool for encouraging informal learning opportunities. Workers' involvement in networks is a critical component in increasing social capital. Thus, the role of informal learning can be highlighted in order to build and maintain social capital (Cairns 2001; Niemela 2003).

3. **Informal learning as a medium for changing workers' perception of the workplace**. As workers engage more frequently in informal learning, they participate in a pedagogical relationship in the workplace (Unwin and Fuller 2003). When a worker explains a process or procedure to a colleague, "'teaching and learning" can occur on the job. Teaching and learning can be institutionally and culturally embedded into the organization and work activities beyond specific formal training sections (Center for Workforce Development 1998; ***What Makes for Good Workplace Learning?*** 2003). Consequently, the workplace can be viewed not only as a place to work but also to teach and learn from each other.

Research about Informal Learning in the Workplace

Recent survey studies (e.g., Betcherman, Leckie, and McMullen 1997; Center for Workforce Development 1998) have confirmed that the majority of job-related knowledge and skills acquisition occurs informally. The New Approaches to Lifelong Learning (NALL) survey also revealed that most of the Canadian labor force is engaged in a wide array of continuing informal learning activities related to their current or prospective jobs (Livingstone 2001). Boud and Middleton (2003) also asserted that informal interactions with peers, such as talking to colleagues or supervisors, during team meetings or through collective problem solving, are predomi-

nant ways of workplace learning and the impact of informal learning on practice would be greater than formal learning approaches.

As described in the first section, a feature of work in the future is growth in small businesses because of technological change and globalization. Informal learning is of particular importance to small enterprises (***What Makes for Good Workplace Learning?*** 2003). Small businesses rely in large part on informal learning to learn and develop skills (Kearns 2002; Kilpatrick and Crowley 1999) due to a lack of the internal resources to support more formal approaches (Smith et al. 2002). Informal on-the-job training is a common way of gaining new ideas and techniques in a small firm for new employees who already possess the skills required for the job (Smith 2003).

Informal learning can be as important as formal learning in the workplace. In the future, greater importance will be placed on informal learning and it will gain legitimacy as a way for workers to learn what they need to know. More resources may be devoted to research on informal learning and looking at ways that informal learning can be strengthened.

E-Learning

Another trend that will influence learning in the workplace in the future is electronic learning. Electronic learning, known as "e-learning," is a growth industry in business and industry and is usually defined as instruction and learning experiences that are delivered via electronic technology, such as the Internet, audio- and videotape, satellite broadcast, interactive TV, and CD-ROM. Web-based learning, computer-based learning, and virtual classrooms are some of the processes and applications used to distribute e-learning (Commission on Technology and Adult Learning 2001; *e-learning Glossary*, online).

In its current form, e-learning has been criticized for its emphasis on the e rather than on the learning.

In 2000, corporations spent approximately $1.2 billion on e-learning, an amount expected to increase to as much as $23 billion by 2005 (Commission on Technology and Adult Learning 2002; Zenger and Uehlein 2001). In 2003, employers in the United States spent less on employee training than in 2002, but e-learning activity increased ("Industry Report 2003" online). Traditional delivery methods using instructors in classrooms decreased by 5%, whereas use of computer-delivered training with no instructor showed a 4% increase. The use of instructor-led training from a remote location also increased by 3%.

In its current form, e-learning has been criticized for its emphasis on the e rather than on the *learning* (Zenger and Uehlein 2001). Knowledge about how adults learn has been largely ignored (Greenagel 2002; Williams 2002), and many e-learning offerings overlook the fact that learning has social aspects and are not designed to develop communities of learners, both important characteristics of workplace learning in the future (Hung and Chen 2001; Hung and Nichani 2001; Pang and Hung 2001). In his research on e-learning in workplaces, Stephenson (2003a,b) found that practice was lagging behind the needs of workplace learners. Most e-learning activities were controlled by the instructor, who specified what was to be learned. Most e-learning is developed using the perspective of learning as skill and knowledge acquisition (Elkjaer 2003). To reach its potential, however, e-learning needs to adopt a participation perspective and allow the learner to manage both the tasks and the processes (ibid.; Stephenson 2003a,b).

To be an effective tool for workplace learning in the future, e-learning will (adapted from Stephenson 2003a, p. 12)—

- recognize the learner as central to initiating and controlling the process and as the primary beneficiary
- be consistent with informal learning patterns in the workplace
- assist the learner in clarifying learning needs
- assist the learner in developing plans and learning goals related to greater effectiveness at work

- be relevant to the learner's long-term personal development
- relate to employer needs
- link to internal and external networks of peers, specialists, and expertise relevant to learner goals
- facilitate sharing, documenting, and accessing experience for future benefit
- provide convenient, just-in-time access to personalized specialist material
- be available when and where the learner needs it be integrated into a organization-wide culture of learning and support

If e-learning becomes a successful strategy for workplace learning in the future, it must assume more of the characteristics that cultivate learning as a social process. Stephenson (2003b) reports on a study of current completion rates in Web-based courses. Over 50% of the instructors did not know or did not report completion rates and, of those who did, 22% worked in organizations that had a completion rate of less than 25%. "Online trainers show a 'dearth of pedagogically interactive and motivating activities within Web-based learning environments'" (Bonk et al. 2002, cited in Stephenson 2003b, online). E-learning has the ability to facilitate social learning processes and must do so if it is to succeed in the future.

Blending of Learning in and out of the Workplace

With the growing importance of social learning in the workplace, the boundary between learning and working is becoming blurred. This trend is closely connected to the increased importance of social capital and informal learning and the growth of e-learning. The workplace is regarded as an important environment and resource for learning (Evans and Rainbird 2002; Evans, Hodkinson, and Unwin 2002). Many workers experience learning through relationships among colleagues, customers, and suppliers as an everyday activity in the workplace (Unwin and Fuller 2003).

In addition, as the division between the workplace and other spheres of life become less distinct, learning occurs anywhere and anytime (Rothwell 2002). Learning takes place in many locations, such as in an automobile or at home in front of a computer or television. Furthermore, in the era of information and knowledge-based economy, organizations call for self-directed learners (e.g., Garrison 1997; Hiemstra 2000), free-agent learners (e.g., Rothwell 2002), and knowledge workers. Workers seek out useful information to guide their performance whenever and wherever they need it. At the same time, workers must increasingly take the initiative and responsibility for their own learning (Merriam and Caffarella 1999; Rothwell 2002).

Although transfer between learning in and out of the workplace has always existed, in the future, it is likely to increase for at least two reasons. First, with the rapid increase in the use of computers and telecommunication technology, it is common for workers to have access to fast connections to the Internet anywhere and anytime they need it. This change represents an important tool for the integration of learning with working in the workplace (Berg 1999). When workers want information and resources that will enable them to solve problems on their jobs, for example, they can access large amounts of information on the Web easily and quickly (Rothwell 2002).

The Internet can be one of the most powerful vehicles for fostering and supporting informal learning in the workplace (Berg 1999, Imel 2003; Rothwell 2003), and some predict that the use of Internet will dominate workplace learning in the next decade (Ausburn 2002). Many workers are able to break down geographical barriers by using the Internet to exchange ideas and share information. Individuals who have access to the Web in their homes can tap into learning resources easily and/or engage in informal learning that may carry over to their jobs. Workers' individual learning needs are more likely to be met immediately and independently through the use of information technology both in and out of workplace. Consequently, as the Internet

revolutionizes learning approaches to transmitting information, fragmentation of learning in and out of the workplace could be decreased in the future.

"Flexibility is a dominant theme among descriptions of contemporary workplace" (Fenwick 2001, p. 5). Organizational flexibility (e.g., flexible firms, network firms, and boundaryless organizations) will likely increase in importance in the future because a flexible organizational structure is a primary characteristic of organizational competitiveness. A flexible organizational structure facilitates learning because it allows workers to gain access to information in other organizations, such as government and community agencies.

Workplace learning is part of a wider system within the organization and the systems depend upon interactive relationships among internal and external components for survival. Various elements in the system establish networks and/or partnerships arrangements (***What Makes for Good Workplace Learning?*** 2003). Networking with other related organizations enables workers to seek information outside of the workplace. As blending between learning in and out of the workplace increases, workers transfer new ideas and skills they have acquired outside the workplace into their jobs (Unwin and Fuller 2003). Concerns related to learning outside the workplace include equity of access, costs of technology, and the quality of the information (Ausburn 2002). Addressing these concerns can facilitate the blending of learning that occurs in and out of the workplace.

Learning is integrated with work and depends on the social process of participation, qualities that will only increase in importance in the future.

Summary

The trends discussed here emerge from current discussions on the growing importance of social learning in the workplace and are connected to the concepts of learning organizations, communities of practice, and organizational learning. Although discussed separately, the trends are intertwined and overlapping. Each emphasizes how learning is integrated with work and depends on the social process of participation, qualities that will only increase in importance in the future.

Conclusion

So what is work going to be like in the future? This compilation describes trends affecting the future workplace, the debate around low-skills and high-wage work, and the future of workplace learning. Some themes emerge from this overview of the future of work:

- **Work will be increasingly complex**. The movement from a manufacturing-based economy based on production to the knowledge-based service and information economies will be completed (Castleton 2002). Increasingly, knowledge will be the currency in the workplace of the future, and successful workers will possess "global knowledge of the industry..., cultural knowledge of the particular workplace..., organizational knowledge..., technical knowledge..., linguistic and cultural knowledge..., and interpersonal knowledge" (Hull 1999, p. 407).

- **Social learning theories will increase in importance in the workplace**. The different types of knowledge required in the workplace of the future and the increasing complexity of work will require the type of learning that emphasizes social processes rather than skill or knowledge acquisition. The networks that workers develop both internally and externally will play vital roles in their ability to be effective. Although human capital prevails in the current discourses on work, in future discussions, a better balance will be created between human capital and social capital.

- **Changing demographics will continue to influence the composition of the work force**. Increasingly, the composition of the work force will reflect the overall composition of the population of the United States. More women, people of color, and immigrants will be present in the work force. Older workers will also constitute a larger percentage of the future work force.

- **Technology will continue to effect work and the workplace**. Technology will continue to affect how work is done. Globalization will continue to develop at a rapid pace due to technology and as described in the following scenario, work practices will continue to change—

  > In a warehouse in Adelaide, a computer programmer takes a break from his 20-hour day to check his phone bill. He rings the phone company, and is transferred to a pleasant sounding voice with an Indian accent. It's 8pm in Bombay and the call centre worker takes on final customer of the day before she rushes home through the continuous peak hour. ("The Future of Work" 2001)

  Technology will also continue to affect workplace learning and communication. E-learning will acquire the characteristics of social learning. In addition, technology will continue to blur the boundaries of learning both in and out of the workplace. It will also allow workers to develop and maintain the networks that will be so important in the workplace of the future.

- **Achieving a balance between low-wage and high-skills will continue to be a challenge**. More than 10 years have passed since the publication of the report, ***America's Choice: High Skills or Low Wages*** (Commission on the Skills of the American Workforce 1990), and many of the same conditions leading to that report still exist. In fact, concern about the increasing numbers of low-wage jobs, the growing gap between high-wage and low-wage work, and the growing casualization of work have intensified. Addressing and ameliorating the issues surrounding these trends will take a concerted effort and a willingness to institute economic and social policies based on a sense of justice.

References

American Youth Policy Forum. ***The Future of Education, Employment and Training Policy: A Conversation with Tony Carnevale. A Forum Brief***. Washington, DC: American Youth Policy Forum, July 2001. http://www.aypf.org/forumbriefs/2001/fb072701.htm

Aring, M. "Working the Future: Skill Needs and Demographics in the U.S." National Dissemination Center for Career and Technical Education Webcast, December 17, 2002. http://www.nccte.org/webcasts/description.asp?wc=31

Ausburn, L. J. "Fast, Flexible, and Digital: Forecasts for Occupational and Workplace Education." ***Workforce Education Forum*** 29, no. 2 (Fall 2002): 29-49.

Balatti, J., and Falk, I. "Socioeconomic Contributions of Adult Learning to Community: A Social Capital Perspective." ***Adult Education Quarterly*** 52, no. 4 (August 2002): 281-298.

Berg, G. A. "Workplace Learning on the Internet." ***WebNet Journal*** 1, no. 4 (October-December 1999): 5-6. http://www.aace.org/pubs/webnet/v1no4/Vol._1_No._4_Berg.pdf

Bernhardt, A. et al. ***Divergent Paths: Economic Mobility in the New American Labor Market***. New York: Russell Sage Foundation, 2001.

Betcherman, G.; Leckie, N.; and McMullen, K. ***Developing Skills in the Canadian Workplace: The Results of the Ekos Workplace Training Survey. CPRN Study #W92***. Ottawa, Ontario: Canadian Policy Research Networks, 1997.

Bierema, L. L.; Bing, J. W.; and Carter, T. J. "The Global Pendulum." ***T+D*** 56, no. 5 (May 2002): 70-78.

Black, J. "Globalization." ***Dictionary of Economics***. New York: Oxford University Press, 2002. http://www.oxfordreference.com/views/ENTRY.html?subview=Mainandentry=t19.001359

Boud, D., and Middleton, H. "Learning from Others at Work: Communities of Practice and Informal Learning." ***Journal of Workplace Learning*** 15, no. 5 (2003): 194-202.

Cairns, T. "For the Sake of Informality." ***Adult Learning*** 12, no. 3 (Summer 2001): 16-18.

Carnevale, A. "Remarks of Anthony Carnevale." Working for America Annual Conference, Philadelphia, April 22, 2002. http://www.newecon.org/Carnavale.html

Carnoy, M. "The Great Work Dilemma: Education, Employment, and Wages in the New Global Economy." In ***Education, Training, and the Future of Work. I: Social, Political and Economic Contexts of Policy Development***, edited by J. Ahier and G. Esland. New York: Routledge in association with the Open University, 1999.

Castleton, G. "Workplace Literacy as a Contested Site of Educational Activity." ***Journal of Adolescent and Adult Literacy*** 45, no. 7 (April 2002): 556-566.

Center for Workforce Development. ***The Teaching Firm: Where Productive Work and Learning Converge. Report on Research Findings and Implications***. Newton, MA: Education Development Center, 1998. (ERIC Document Reproduction Service No. ED 461 754)

Cetron, M. J., and Davies, O. "Trends Now Changing the World: Technology, the Workplace, Management, and Institutions." ***Futurist*** 35, no. 2 (March-April 2001): 27-42.

Cetron, M. J., and Davies, O. "Trends Shaping the Future: Economic, Societal, and Environmental Trends." ***Futurist*** 37, no. 2 (January-February 2003a): 27-42.

Cetron, M. J., and Davies, O. "Trends Shaping the Future: Technological, Workplace, Management, and Institutional Trends." ***Futurist*** 37, no. 2 (March-April 2003b): 30-43.

"Charting the Projections: 2000-10." ***Occupational Outlook Quarterly*** 45, no. 4 (Winter 2001-2002): 2-42.

Coates, J. F. "Four Perspectives on the Future of Work." ***Employment Relations Today*** 29, no. 1 (Spring 2002): 1-15.

Cofer, D. A. ***Informal Workplace Learning. Practice Application Belief no. 10***. Columbus: ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education for Training and Employment, the Ohio State University, 2000. (ERIC Document Reproduction Service No. ED 442 993) http://cete.org/acve

Commission on Technology and Adult Learning. ***A Vision of E-Learning for America's Workforce***. Alexandria, VA: American Society for Training and Development; Washington, DC: National Governors' Association, 2001. (ERIC Document Reproduction Service No. ED 455 432)

Commission on the Skills of the American Workforce. ***America's Choice: High Skills or Low Wages!*** Rochester, NY: National Center on Education and the Economy, 1990. (ERIC Document Reproduction Service No. ED 323 297)

Council of Churches for Britain and Ireland. "The Changing Nature of Work." In ***Education, Training and the Future of Work. I: Social, Political and Economic Contexts of Policy Development***, edited by J. Ahier and G. Esland. London; New York: Routledge in association with the Open University, 1999.

Domestic Strategic Group. ***Grow Faster Together or Slowly Apart: How Will America Work in the 21st Century?*** Queenstown, MD: Aspen Institute, 2002. http://www.aspeninst.org/AspenInstitute/files/CCLIBRARYFILES/FILENAME/0000000225/DSGBrochure_final.pdf

Dovey, K., and Onyx, J. "Generating Social Capital at the Workplace: A South African Case of Inside-Out Social Renewal." ***International Journal of Lifelong Education*** 20, no. 3 (May-June 2001): 151-168.

Eisen, P. "Skills for a 21st Century Workforce: Can We Meet the Challenge?" 2003. http://www.nam.org/tertiary.asp?TrackID=&DocumentID=26520

"e-Learning Glossary." http://www.learningcircuits.org/glossary.html

Elkjaer, B. "Organizational Learning with a Pragmatic Slant." ***International Journal of Lifelong Education*** 22, no. 5 (September-October 2003): 481-494.

Ellwood, D. "How We Get Here." In ***Grow Faster Together or Slowly Apart: How Will America Work in the 21st Century?*** Queenstown, MD: Domestic Strategy Group, Aspen Institute, 2002. http://www.aspeninst.org/AspenInstitute/files/CCLIBRARYFILES/FILENAME/0000000225/DSGBrochure_final.pdf

Evans, K., and Rainbird, H. "The Significance of Workplace Learning for a 'Learning Society.'" In ***Working to Learn: Transforming Learning in the Workplace***, edited by K. Evans, P. Hodkinson, and L. Unwin. London, UK: Kogan Page, 2002.

Evans, K.; Hodkinson, P.; and Unwin, L. "Editor's Introduction." In ***Working to Learn: Transforming Learning in the Workplace***, edited by K. Evans, P. Hodkinson, and L. Unwin. London, UK: Kogan Page, 2002.

Falk, I. "The Future of Work and the Work of the Future." ***Journal of Adolescent and Adult Literacy*** 44, no. 6 (March 2001): 566-571.

Falk, I., and Harrison, L. "Community Learning and Social Capital: Just Having a Little Chat." ***Journal of Vocational Education and Training*** 50, no. 4 (1998): 609-627.

Falk, I.; Golding, B.; and Balatti, J. ***Building Communities: ACE, Lifelong Learning and Social Capital***. Melbourne, Victoria, Australia: Adult, Community and Further Education Board, 2000. (ERIC Document Reproduction Service No. ED 459 316) http://www.acfe.vic.gov.au/about/about_pub_bldgcomm.asp

Fenwick, T. "Tides of Change: New Themes and Questions in Workplace Learning." In ***Sociocultural Perspectives on Learning through Work. New Directions for Adult And Continuing Education***, no. 92, edited by T. Fenwick, pp. 3-17. San Francisco: Jossey-Bass, Winter 2001.

"Futurework." ***Occupational Outlook Quarterly*** 44, no. 2 (Summer 2000): 31-36.

Garrison, D. R. "Self-Directed Learning: Toward a Comprehensive Model." ***Adult Education Quarterly*** 48, no. 1 (Fall 1997): 18-33.

Geller, A. "Lost Jobs Gone for Good, Experts Say." ***Columbus Dispatch***, Sunday, October 12, 2003, p. E2.

Ghose, A. K. ***Jobs and Incomes in a Globalizing World***. Geneva, Switzerland: International Labour Office, 2003.

Grantham, C. "On the ReFormation of Work." ***The Future of Work Now***, August-December 2002. http://www.thefutureofwork.net/assets/The_ReFormation_of_Work.pdf

Greenagel, F. L. ***The Illusion of e-Learning: Why We Are Missing Out on the Promise of Technology***. Phoenix, AZ: League for Innovation in the Community College, 2002. http://www.league.org/publication/whitepapers/0802.html

Hager, P. "Recognition of Informal Learning: Challenges and Issues." ***Journal of Vocational Education and Training*** 50, no. 4 (1998): 521-535.

Hall, C. "Futurist Forecasts Shortage of Skilled Workers." ***Columbus Dispatch***, Sunday, October 12, 2003, E2.

Hecker, D., E. "Occupational Employment Projections to 2010." ***Monthly Labor Review*** 124, no. 11 (November 2001): 57-84.

Heidemann, W. ***Knowledge and Skills for the New Economy: The Role of Educational Policy. Training Matters: Working Paper Series WIP #2001- 03.*** North York, Ontario: Centre for Research on Work and Society, York University, 2001. (ERIC Document Reproduction Service No. ED 471 611)

Hiemstra, R. "Self-Directed Learning: The Personal Responsibility Model." In ***Conceptions of Self-Directed Learning: Theoretical and Conceptual Considerations***, edited by G. A. Straka. New York: Waxmann, 2000.

Hull, G. A. "What's in a Label?" ***Written Communication*** 16, no. 4 (October 1999): 379-411.

Hung, D. W. L., and Chen, D.-T. "Situated Cognition, Vygotskian Thought and Learning from Communities of Practice Perspective: Implications for the Design of Web-Based E-Learning." ***Educational Media International*** 38, no. 1 (March 2001): 3-12.

Hung, D., and Nichani, M. "Constructivism and e-Learning: Balancing between the Individual and Social Levels of Cognition." ***Educational Technology*** 41, no. 2 (March-April 2001): 40-41.

Imel, S. ***Informal Adult Learning and the Internet. Trends and Issues Alert no. 50***. Columbus: ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education for Training and Employment, the Ohio State University, 2003. http://cete.org/acve

Imel, S., and Stein, D. S. "Creating Self-Awareness of Learning that Occurs in Community." In ***Proceedings of the Midwest Research to Practice Conference in Adult, Continuing, and Community Education, Columbus, Ohio, October 8-10, 2003***, edited by T. R. Ferro and G. J. Dean, pp. 116-121. Indiana: Indiana University of Pennsylvania, 2003. http://www.alumni-osu.org/midwest/proceedings.html

Indiana Career and Postsecondary Advancement Center. ***Job Outlook Information—Careers for the Future. InfoSeries IS-46***. Bloomington: ICPAC, Indiana University, December 2001. http://icpac.indiana.edu/publications/infoseries/is-46.xml

"Industry Report 2003." ***Training*** 40, no. 3 (October 2003): 21-40. http://www.trainingmag.com/training/reports_analysis/feature_display.jsp?vnu_content_id=1988738

International Monetary Fund. ***Globalization: Threat or Opportunity? IMF Issues Brief 00/01.*** Washington, DC: IMF, 2000. http://www.imf.org/external/np/exr/ib/2000/041200.htm

Jenson, J. ***Shifting the Paradigm: Knowledge and Learning for Canada's Future. CPRN Discussion Paper No. F18***. Ottawa, ON: Canadian Policy Research Networks, 2001. http://www.cprn.com/documents/7872_en.pdf

Jorgensen, H. J. ***When Good Jobs Go Bad: Young Adults and Temporary Work in the New Economy***. Washington, DC: 2030 Center, 1999. http://www.2030.org/2030full.pdf

Judy, R., and D'Amico, C. ***Workforce 2020: Work and Workers in the 21st Century***. Indianapolis, IN: Hudson Institute, 1997. (ERIC Document Reproduction Service No. ED 409 463)

Katz-Fishman, W.; Scott, J.; and Modupe, I. "Globalization of Capital and Class Struggle." In ***Labor and Capital in the Age of Globalization: The Labor Process and the Changing Nature of Work in the Global Economy***, edited by B. Berberoglu. Lanham, MD: Rowman & Littlefield, 2002.

Kearns, P. ***Are Two Worlds Colliding? The Provision of Training and Learning Services for Small Business***. Leabrook, Australia: National Centre for Vocational Education Research, 2002. (ERIC Document Reproduction Service No. ED 473 179) http://www.ncver.edu.au/research/proj/nr1003.pdf

Keegan, D. ***The Future of Learning: From eLearning to mLearning***. Hagen, Germany: FernUniversität, November 2002. http://www.fernuni-hagen.de/ZIFF/ZIFF_PAP_119.pdf

Keep, E., and Mayhew, K. "Evaluating the Assumptions that Underline Training Policy." In ***Education, Training and the Future of Work. I: Social, Political and Economic Contexts of Policy Development***, edited by J. Ahier and G. Esland. London, UK: Routledge, 1999.

Kerka, S. ***Future Work. Myths and Realities no. 11***. Columbus: ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education for Training and Employment, the Ohio State University, 2000. (ERIC Document Reproduction Service No. ED 448 292) http://cete.org/acve

Kilpatrick, S., and Crowley, S. ***Learning in Small Business. Discussion Paper D1/1999***. Launceston, Australia: Centre for Research and Learning in Regional Australia, University of Tasmania, 1999. (ERIC Document Reproduction Service No. ED 446 227) http://www.crlra.utas.edu.au/files/discussion/1999/D01-1999.pdf

Kilpatrick, S.; Bell, R.; and Falk, I. "The Role of Group Learning in Building Social Capital." ***Journal of Vocational Education and Training*** 51, no. 1 (1999): 129-144.

Larson, R. W. "Globalization, Societal Change, and New Technologies: What They Mean for the Future of Adolescence." ***Journal of Research on Adolescence*** 12, no. 1 (2002): 1-30.

Lave, J., and Wenger, E. ***Situated Learning: Legitimate Peripheral Participation***. New York: Cambridge University Press, 1991.

Lee, L. "Forecasts that Missed by a Mile." ***Futurist*** 34, no. 5 (September-October 2000): 20-25.

Livingstone, D. W. "Expanding Notions of Work and Learning: Profiles of Latent Power." In ***Sociocultural Perspectives on Learning through Work New Directions for Adult and Continuing Education*** no. 92, edited by T. Fenwick, pp. 19-30. San Francisco: Jossey-Bass, Winter 2001.

Lohman, M. C. "Environmental Inhibitors to Informal Learning in the Workplace: A Case Study of Public School Teachers." ***Adult Education Quarterly*** 50, no. 2 (Winter 2000): 83-101.

Lohman, M. C., and Woolf, N. H. "Finding Their Own Way: Informal Learning and Public School Teachers." In ***Academy of Human Resource Development Conference Proceedings, Oak Brook, Illinois, March 4-8, 1998***, edited by R. J. Torraco, pp. 918-925. Baton Rouge, LA: AHRD, 1998. (ERIC Document Reproduction Service No. ED 428 224)

Marsick, V. J., and Watkins, K .E. "Informal and Incidental Learning." In ***The New Update on Adult Learning Theory. New Directions for Adult and Continuing Education***, no. 89, edited by S. B. Merriam, pp. 25-34. San Francisco: Jossey-Bass, Spring 2001.

Merriam, S. B., and Caffarella, R. S. ***Learning in Adulthood***. San Francisco: Jossey-Bass, 1999.

Munro, A., and Rainbird, H. "Job Change and Workplace Learning in the Public Sector: The Significance of New Technology for Unskilled Work." ***New Technology, Work and Employment*** 17, no. 3 (2002): 224-235.

National Association of Manufacturers. ***The Skills Gap 2001***. Washington, DC: Center for Workforce Success, National Association of Manufacturers, 2001. http://www.nam.org/tertiary.asp?TrackID=&CategoryID=958&DocumentID=24443

Niemela, S. "Education for Social Capital." ***Lifelong Learning in Europe*** 8, no. 1 (2003): 36-42.

Nothing But Net: American Workers and The Information Economy. Work Trends: Americans' Attitudes about Work, Employers, and Government. New Brunswick, NJ: John J. Heldrich Center for Workforce Development, Rutgers, The State University; Storrs: Center for Survey Research and Analysis, University of Connecticut, 2000. (ERIC Document Reproduction Service No. ED 466 753).

Organisation for Economic Cooperation and Development. ***Employment Outlook***. Paris, France: OECD, 2000.

Overwien, B. "Informal Learning and the Role of Social Movements." ***International Review of Education*** 46, no. 6 (November 2000): 621-640.

Pang, P. M. N., and Hung, D. W. L. "Activity Theory as a Framework for Analyzing CPT and E-Learning Environments." ***Educational Technology*** 41, no. 4 (July-August 2001): 36-42.

Peristein, R. "Pundits Who Predict the Future Are Always Wrong." ***Nation*** 272, no. 16 (2001): 11-14.

Potter, E. E. "Telecommuting: The Future of Work, Corporate Culture, and American Society." ***Journal of Labor Research*** 24, no. 1 (Winter 2003): 73-84.

Putnam, R. D. "Turning in, Turning out: The Strange Disappearance of Social Capital in America." ***Political Science & Politics*** 28, no. 4 (1995): 664-683.

Raphael, T. "Crystal Gazing and the Future of Work." ***Workforce*** 81, no. 9 (September 2002): 112.

Redovich, D. "Jobs and Education and the Big Con." Unpublished paper. Greendale, WI: Center for the Study of Jobs & Education in Wisconsin and United States, 2003. http://www.jobseducationwis.org/141%20Preface%20Jobs%20&%20Education.doc

Rothwell, W. J. ***The Workplace Learner: How to Align Training Initiatives with Individual Learning Competencies***. New York: AMACOM, 2002.

Sassen, S. "Deconstructing Labor Demand in Today's Advanced Economies: Implications for Low-Wage Employment." In ***Laboring below the Line: The New Ethnography of Poverty, Low-Wage Work, and Survival in the Global Economy***, edited by F. Munger. New York: Russell Sage Foundation, 2002a.

Sassen, S. "Global Cities and Survival Circuits." In ***Global Woman: Nannies, Maids, and Sex Workers in the New Economy***, edited by B. Ehrenreich and A. R. Hochschild. New York: Metropolitan Books, 2002b.

Shulman, B. "Four Myths about Low-Wage Work." ***Alameda Times-Star***, August 29, 2003. http://www.alternet.org/story.html?StoryID=16686

Smith, A.; Oczkowski, E.; Noble, C.; and Macklin, R. ***New Management Practices and Enterprise Training***. Leabrook, Australia: National Centre for Vocational Education Research, 2002. (ERIC Document Reproduction Service No. ED 465 114) http://www.ncver.edu.au/research/proj/nr7024.pdf

Smith, J. G. "Jobs and People." In ***Education, Training and the Future of Work. I: Social, Political and Economic Contexts of Policy Development***, edited by J. Ahier, and G. Esland. London, UK: Routledge, 1999.

Smith, P. J. "Workplace Learning and Flexible Delivery." ***Review of Educational Research*** 73, no. 1 (Spring 2003): 53-88.

Stein, D. S. ""Situated Learning and Planned Training on the Job." ***Advances in Developing Human Resources*** 3, no. 4 (2001): 415-442.

Stevenson, J. "A Review of Research and Practice in E-Learning in the Work-Place and Proposals for Its Effective Use." Paper presented at the American Educational Research Association Conference, Chicago, IL, 2003a. http://www1.lle.mdx.ac.uk/iclml/jsaera03.pdf

Stevenson, J. "Pedagogical Underpinnings of Quality in E-Learning and E-Training." Powerpoint presentation, EDEN Conference, Rhodes, June 26, 2003b. http://www1.lle.mdx.ac.uk/iclml/Catall.htm

Taylor, R. ***Britain's World of Work—Myths and Realities. An ESRC Future of Work Programme Seminar Series***. Swindon, UK: Economic and Social Research Council, 2002. http://www.leeds.ac.uk/esrcfutureofwork/downloads/fow_publication_3.pdf

"The Future of Work." A five-part series on The Morning Show, 26.3.01-30.3.01. http://www.abc.net.au/triplej/morning/work/default.htm

Thornburg, D. ***The New Basics: Education and the Future of Work in the Telematic Age***. Alexandria, VA: Association for Supervision and Curriculum Development, 2002. (ERIC Document Reproduction Service No. ED 464 407)

Tremblay, D. "New Ways of Working and New Types of Work? What Developments Lie Ahead? Report for the Future Forum, "Places of Work." Ottawa, ON: Policy Research Initiative, 2001. http://policyresearch.gc.ca/page.asp?pagenm=ff-fsa_workplace

Unwin, L., and Fuller, A. ***Expanding Learning in the Workplace: Making More of Individual and Organizational Potential. A NIACE Policy Discussion Paper.*** Leicester, England: National Institute of Adult Continuing Education, 2003.

What Makes for Good Workplace Learning? At a Glance. Adelaide, Australia: National Centre for Vocational Education Research, 2003. http://www.ncver.edu.au/research/core/cp0207.pdf

Williams, S. W. "Instructional Design Factors and the Effectiveness of Web-Based Training/Instruction." In ***Cyril O. Houle Scholars Global Research Perspectives***, vol. 2, May 2002. http://www.coe.uga.edu/hsp/monographs2/williams.pdf

Zenger, J. and Uehlein, C. "Why Blended Will Win." ***T+D*** 55, no. 8 (August 2001): 54-60.

Resources

The following annotated list of resources provide further information on some of aspects of the future of work featured in this publication.

Print Resources

Brooks, L. J., and Bowker, G. "Playing at Work: Understanding the Future of Work Practices at the Institute for the Future." ***Information Communication and Society*** 5, no. 1 (March 2002): 109-136.

Analyzes management assumptions and theories of playing at work. Includes an examination of management strategies, elements creating types of disclosure, and summary of the convergence of play and competing dialogues at worksites.

Carnevale, A. P., and Rose, S. J. ***Education for What? The New Office Economy.*** Princeton, NJ: Educational Testing Service, 1998.

Reports how office work has come to dominate the U.S. economy and describes the types of jobs (elite, good, and less skilled) that are available in the sector. Presents both optimistic and pessimistic perspectives.

Coates, J. F. "Four Perspectives on the Future of Work." Reprinted from ***Employment Relations Today,*** Spring 2002. http://josephcoates.com/commentary4.html#title

Examines new workplace hazards, the future of organized labor, use of technology, and the impact of the global economy. Describes future implications for business.

Fitzgerald, J. "Caring for Children as a Career." ***American Prospect*** (Summer 2002): A28-A31.

Describes how professionalizing child care, a low-wage occupation, would be good for children, for working mothers, and for those who work as child care providers. Challenges current federal policies and suggests changes needed.

Friedman, D. "White Collar Blues: Government and the Rich Win and Educated Workers Lose When Jobs Go Offshore." ***Los Angeles Times***, August 3, 2003, p. M.1.

Reports on plans of major U.S. technology companies, such as IBM, to export thousands of high-skill jobs overseas and speculates that "worrisome" trends in the economy will undoubtedly strengthen.

Kirn, W. "Help Wanted." ***New York Times Magazine*** 152, no. 52578 (August 17, 2003): 15-16.

Reflects on globalization and what is happening in terms of the middle class in the United States. Proposes two ways of looking for a remedy to joblessness and includes a chart of where jobs do not exist.

Lake Snell Perry and Associates. ***Getting Ahead: A Survey of Low-Wage Workers on Opportunities for Advancement***. Boston, MA: Jobs for the Future, September 2003.

Over 1,000 individuals who work outside the home for at least 30 hours per week and live in households with annual incomes up to 200% of the federal poverty level were surveyed. Findings included the following: low-wage workers are relatively satisfied with their current job situations

and most feel their jobs are secure but are less satisfied with earnings and opportunities for growth; most want to upgrade their skills and move to better jobs; and most find balancing home and family demands a deterrent to focusing on their careers.

Maglen, L. ***Australians Working in a Global Economy and What This Means for Education and Training. Working Paper No. 39.*** Victoria, Australia: Centre for the Economics of Education and Training, Monash University, 2001.

Reports on the impact of the emergence of the global knowledge-based economy on employment in Australia. The nature and extent of the actual and potential participation of Australian workers in labor markets that are becoming increasingly globalized is examined.

Newfield, J. "How the Other Half Still Lives." ***The Nation*** 276, no. 10 (March 17, 2003): 11-14, 16, 17.

Based on his visits to union halls, food pantries, and immigrant community centers located in the Bronx, the author observes growing economic inequalities. Current conditions are compared to previous eras, including the Great Depression.

Poell, R. F., and Van der Krogt, F. J. "Project-Based Learning in Organizations: Towards a Methodology for Learning in Groups." ***Journal of Workplace Learning*** 15, no. 5 (2003): 217-228.

Proposes a methodology for employees in organizations to use in setting up and implementing their own group learning projects. Argues that project-based learning can be used to make everyday learning more systematic without formalizing it.

Sassen, S. "Perspectives on Immigration." Immigration and Visa Information, Bangla 2000. http://www.bangla2000.com/Immigration/Features/global-immigration.html

Examines the relationship between large numbers of immigrants from developing countries and the casualization of the employment relation in a growing number of jobs.

Wagner, C. G. "The Impending Jobs Crisis." ***Futurist*** 37, no. 2 (March-April 2003): 6-7.

Examines the prediction that the United States is heading into a severe shortage of workers. Article is based on the book, ***Impending Crisis: Too Many Jobs, Too Few People***, by Roger E. Herman, Tom G. Olivo, and Joyce L. Gioia (Oakhill Press 2003).

Watson, I.; Buchanan, J.; Campbell, I.; and Briggs, C. ***The Future of Work: Trends and Challenges in Australian Workplaces***. Melbourne: Australian Council of Trade Unions, 2003. http://www.actu.asn.au/public/news/files/fowexsum.pdf

The Australian labor market has become more diverse during the past 20 years and although diversity has benefitted some individuals and the economy, evidence exists that many basic workplace standards have been allowed to slip. A growing inequality in the labor market is evident based on growing disenchantment with number of hours worked, casual employment, wage inequality, the balance in work and family, and work intensification.

BEST COPY AVAILABLE

Websites

Australian Council of Trade Unions Future of Work: http://actu.asn.au/public/futurework/

Outlines some of the key issues facing Australians. Sections include fairness in the workplace, choices for working families, and skills and job opportunities.

Canadian Policy Research Networks: http://www.cprn.com

The Work Network section of the CPRN site contains a number of publications related to the future of work in Canada.

Economic and Social Research Council Future of Work: http://www.leeds.ac.uk/esrcfutureofwork/

This site contains extensive information about the future of work in the United Kingdom. Click on the "synopsis" section for an overview of the site. A number of articles are available in PDF files for downloading and can be accessed by clicking on the "output" section of the site.

IRC/Future-Org: http://www.future-org.com

Dedicated to the transformation of organizations, this site information about the "Reformation of Work" project. Information on the trends projected to transform business can be accessed in the August 2002-November 2002 newsletter issues that are archived on the site.

2030 Center: http://www.2030.org

This public policy center that advocates for the economic interests of young adults contains information on two major projects: social security project and the future of work project.

About the Authors

DaeYeon Cho is a doctoral candidate in the department of workforce development and education and a graduate research associate in the Center on Education and Training for Employment at the Ohio State University.

Susan Imel is Director of the ERIC Clearinghouse on Adult, Career, and Vocational Education at the Ohio State University and co-editor-in-chief of the Jossey-Bass series ***New Directions for Adult and Continuing Education***. She has published and taught extensively in adult education and directed other projects including the Adult Basic and Literacy Education Evaluation Design Project and For the Common Good: Building Linkages for At-Risk Youth and Adults in Ohio.

This project has been funded at least in part with Federal funds from the U.S. Department of Education under Contract No. ED-99-CO-0013. The content of this publication does not necessarily reflect the views or policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

Center on Education and Training for Employment, College of Education,
The Ohio State University

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

	This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.
X	This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").